No. 9600358

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The University of Georgia Research Foundation, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 *ET SEQ.*)

SOYBEAN

'Benning'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this thirty-first day of March, in the year of our Lord two thousand.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-005

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
The University of Georgia Research Foundation, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
G88-3266

3. VARIETY NAME
Benning

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
Boyd Graduate Studies Research Center
University of Georgia
Athens, GA 30602-7411

5. TELEPHONE *(include area code)*
(706) 542-6512

6. FAX *(include area code)*
(706) 542-5638

FOR OFFICIAL USE ONLY

PVPO NUMBER 9600358

FILING DATE: Aug 7 1996

FEE RECEIVED
FILING AND EXAMINATION FEE: $ 2,450.00
DATE: August 7 1996
CERTIFICATION FEE: $ 260
DATE: Oct 28 1999

7. GENUS AND SPECIES NAME
Glycine max

8. FAMILY NAME *(Botanical)*
Leguminosae

9. CROP KIND NAME *(Common name)*
Soybean

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Georgia

12. DATE OF INCORPORATION
17 Nov 1978

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Janice A. Kimpel
Vice-President Office for Research
Boyd Graduate Studies Research Center
University of Georgia
Athens, GA 30602-7411

14. TELEPHONE *(include area code)*
(706) 542-5929

15. FAX *(include area code)*
(706) 542-5638

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D. Additional Description of the Variety
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)?*
☒ YES *(If "yes," answer items 18 and 19 below)* ☐ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☐ REGISTERED ☒ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES *(If "yes," give names of countries and dates)* ☒ NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
Joe L. Key			
NAME *(Please print or type)* Joe L. Key		NAME *(Please print or type)*	
CAPACITY OR TITLE Executive Vice President	DATE 8-20-96	CAPACITY OR TITLE	DATE

EXHIBIT A
THE UNIVERSITY OF GEORGIA RESEARCH FOUNDATION
APPLICATION FOR BENNING
ORIGIN AND BREEDING HISTORY

1985	Cross of 'Hutcheson" x 'Coker 6738' made in Athens, GA
1985-86	F_1 grown during winter at Isabela, Puerto Rico
1986	F_2 grown in Athens, GA
1986-87	F_3 generation was advanced in winter at Isabela, Puerto Rico
1987	F_4 was grown in Athens, GA
1987-88	$F_{4:5}$ lines were screened for resistance to southern root-knot nematode and soybean cyst nematode Race 3 in the greenhouse during the winter
1988	$F_{4:5}$ lines were grown in Athens, GA. Plant row # 88-3266 was selected and composited after it was determined to be stable and true breeding for major characteristics
1989	Tested as G88-3266 in Athens, GA in 2 reps
1990	Tested at Athens and Plains, GA in 2 reps/location
1991	Tested at Athens, Plains, and Griffin, GA in 3 reps/location
1992	Entered in USDA Uniform Preliminary Test VII grown at 9 locations (2 reps/location)
1993	Evaluated in USDA Uniform Regional Test VII at 18 locations (3 reps/location). Grown at 2 locations in Georgia Soybean Performance Trials (3 reps/location).
1994	Evaluated in USDA Uniform Regional Test VII at 18 locations (3 reps/location). Grown at 11 locations in Georgia Soybean Performance Trials (3 reps/location).
1995	Evaluated in USDA Uniform Regional Test VII at 16 locations (3 reps/location). Grown at 11 locations in Georgia Soybean Performance Trials (3 reps/location).
1996	G88-3266 is released as 'Benning'

EXHIBIT B
THE UNIVERSITY OF GEORGIA RESEARCH FOUNDATION
APPLICATION FOR BENNING
NOVELTY STATEMENT

To our knowledge Benning most nearly resembles Haskell, Stonewall, and Hagood. Differences included but are not limited to the following:

1. Peanut root-knot nematode - Benning differs from Stonewall and Hagood in that it is resistant to peanut root-knot nematode whereas Stonewall and Hagood are susceptible.

2. Race 3 of soybean cyst nematode - Benning differs from Haskell in that it is resistant to soybean cyst nematode Race 3 whereas Haskell is susceptible.

3. Flower color - Benning has purple flowers whereas Hagood and Stonewall have white flowers.

4. Pubescence color - Benning has tawny pubescence whereas Hagood has gray pubescence.

5. Hilum color - Benning differs from Haskell, Stonewall, and Hagood in that it has brown hilum whereas Haskell and Stonewall have black hilum and Hagood has buff hilum.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT C (Soybean)

PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
The University of Georgia Research Foundation, Inc.	G88-3266	Benning

ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code)
Boyd Graduate Studies Research Center
University of Georgia
Athens, GA 30602-7411

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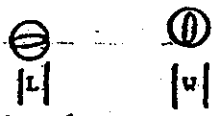
PVPO NUMBER
9600358

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[2] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

[1][5] Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

[3] 1 = Buff 2 = Yellow 3 = Brown * 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other (Specify)

*Genetically brown, but of varying intensity.

★ 6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

[1] 1 = Low 2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

[1] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ 9. HYPOCOTYL COLOR:

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other (Specify) _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[1] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[1][0] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [2] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★ [0] Bacterial Blight (*Pseudomonas glycinea*)

★ [0] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ [0] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [2] Other (*Specify*) prevalent field races

[0] Target Spot (*Corynespora cassiicola*)

[0] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[2] Powdery Mildew (*Microsphaera diffusa*)

★ [0] Brown Stem Rot (*Cephalosporium gregatum*)

[2] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum var. sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Race 6 [0] Race 7

[0] Race 8 [0] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [1] Race 2 [2] Race 3 [1] Race 4 [1] Other *(Specify)* Race 14, Race 9

[2] Lance Nematode *(Hoplolaimus Colombus)* (shows tolerance, there is no reported resistance)

★ [2] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[2] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[2] OTHER DISEASE NOT ON FORM *(Specify)*: javanese root-knot nematode

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [0] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Haskell	Seed Coat Luster	Haskell
Leaf Shape	Haskell	Seed Size	Haskell
Leaf Color	Stonewall	Seed Shape	Haskell
Leaf Size	Stonewall	Seedling Pigmentation	Haskell

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Benning Submitted	156	1.6	86	--	--	41.6	21.0	15.0	--
Haskell Name of Similar Variety	156	2.2	84	--	--	41.0	20.8	15.9	--

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.

2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.

3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.

4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT D
THE UNIVERSITY OF GEORGIA RESEARCH FOUNDATION
APPLICATION FOR BENNING
ADDITIONAL DESCRIPTION OF VARIETY

The Georgia Agricultural Experiment Stations announce the release of a new high yielding, multiple-pest resistant variety named BENNING. This Maturity Group VII variety was selected to combine superior yield with resistance to southern, peanut, and javanese root-knot nematodes and race 3 of soybean cyst nematode.

BENNING was derived from a F_4 plant from the cross Hutcheson x Coker 6738. The generations were advanced to the F_4 by the pod bulk method in Georgia and Puerto Rico. From 1989 to 1991, BENNING was tested as G88-3266 for nematode and disease resistances, agronomic performance, and seed yield in Georgia. G88-3266 was advanced to Regional Preliminary Group VII in 1992. From 1992 to 1995, it was evaluated in Georgia and Regional Test VII. Its mean performance in 51 environments in the southern USA is shown below:

Variety	Seed yield	Maturity	Lodging	Plant height	Seed quality	Seeds/ pound	Composition[§] Oil	Protein
	bu/A	date	rating[†]	inches	rating[‡]	no.	%	%
BENNING	43.8	10/21	1.6	34	1.8	3,026	21.0	41.6
Haskell	43.1	10/21	2.2	33	1.8	2,855	20.8	41.0
Stonewall	40.7	10/18	1.7	32	1.8	2,718	20.9	42.4

[†] Rating: 1 (plants erect) to 5 (plants prostrate).
[‡] Rating: 1 (very good) to 5 (very poor). [§] Dry-weight basis.

BENNING averages 2 and 8% higher in yield than Haskell and Stonewall, respectively. It matures the same day as Haskell and 3 days later than Stonewall. BENNING has similar plant height and superior lodging resistance to Haskell. Its seeds are smaller than Haskell and Stonewall, but are of similar quality. Oil content of BENNING is similar to Stonewall. Its protein content is higher than Haskell, but lower than Stonewall.

BENNING has a determinate growth habit, purple flowers, tawny pubescence, and tan pod walls. Seeds are yellow with shiny seed coats and a brown hila that vary in intensity. It is resistant to southern, peanut, and javanese root-knot nematodes, race 3 of soybean cyst nematode, stem canker, and frogeye leaf spot.

EXHIBIT E
THE UNIVERSITY OF GEORGIA RESEARCH FOUNDATION
APPLICATION FOR BENNING
STATEMENT OF APPLICANT'S OWNERSHIP

The variety for which plant variety protection is hereby sought was developed by H. Roger Boerma, E. Dale Wood, Richard S. Hussey, and Daniel V. Phillips employees at the University of Georgia Agricultural Experiment Stations. The Georgia Agricultural Experiment Stations is a part of The University of Georgia. The University of Georgia is one of the universities of the University System of Georgia. The Board of Regents of the University System of Georgia ("Board of Regents") is a body that was created by the Constitution of the State of Georgia and is charged with the responsibility of operating the Universities in the the University System of Georgia. The University of Georgia Research Foundation, Inc. is a Georgia nonprofit corporation which was incorporated to, among other things, own and exploit intellectual property developed or created at The University of Georgia. On June 9, 1982 the Board of Regents approved a Patent Policy regarding inventions and discoveries by persons employed at The University of Georgia. As an employee at the Georgia Agricultural Experiment Stations, H. Roger Boerma, E. Dale Wood, Richard S. Hussey, and Daniel V. Phillips are subject to said Patent Policy. Rights in novel plant varieties developed at The University of Georgia, including Benning, are covered by said Patent Policy. By agreement, the Board of Regents assigned to the University of Georgia Research Foundation, Inc. all rights in intellectual property covered by said Patent Policy. This agreement applies to then existing intellectual property and to intellectual property which was developed thereafter.